Vaibhav Arora

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Github, Website, LinkedIn

EDUCATION

Université Paris-Saclay   **Orsay, FR**
  MSc, Artificial Intelligence (UFR Sciences, Université Paris Sud)   (Sept 2020-Sept 2022)

IFP School *(formerly: École Nationale Supérieure du Pétrole et des Moteurs)*   **Rueil-Malmaison, FR**
  Diplôme d'ingénieur spécialisé, Powertrain Engineering   (Sept 2018-Feb 2020)
  GPA: 3.52/4
  Intern under Dr. Alain Chevalier (Powertrain R&A engr.), studies sponsored by Ford RIC, Aachen

Wayne State University, Graduate School of Engineering   **Detroit, USA**
  Graduate Certificate - Electric-Drive Vehicle Engineering   (August 2017-Jun 2018)
  GPA: 4.00/4.00
  Student Assistantship under Dr. Jerry Ku (Associate Prof., Mechanical Department, WSU)

Dehradun Institute of Technology   **Dehradun, IN**
  Bachelor of Technology, Mechanical Engineering   (August 2013-June 2017)
  GPA: 3.77/4.00

EXPERIENCE

Naver Labs Europe, Grenoble, FR   (Sept 2021-Nov 2021)
  CDD, Part-time (15 hrs/week) − Multimodal fusion of magnetic and image data for low-cost robot localization.

Naver Labs Europe, Grenpble, FR   (May 2021-Sept 2021)
  Intern, 3D vision team − Absolute camera pose estimation with multi-angular cameras for low-cost robot localization. Empirical exploration of different fusion models (CNN/Transformers based backbones). Distinguished Intern Award

ENSTA Paris, FR   (Jan 2021-Feb 2021)
  Travail d'étude et de recherche − CARLA based project for automated creation of dataset of various scenarios that would eventually be used for explainability (XAI) studies in Reinforcement Learning in AVs

Ford Research and Innovation Center, Aachen, DE   (July 2019-Dec 2019)
  Intern, HIL Lab − Integrated a SIL Plant Control Module and Plant Model in Simulink with IPG CarMaker for Adaptive Cruise Control (ACC) functionality testing in a virtual environment for Diesel application (Ford Transit) via UDP

Ford Research and Innovation Center, Aachen, DE   (Jan 2019-Feb 2019)
  Intern, HIL Lab − Studied causal (ODE solvers) and acausal (DAE solvers) modeling environments and tested Simscape's compatibility with Ford's in-house library of physical models by developing a plant model (system level) of a BEV

EcoCAR 3 Student Competition, WSU Team, USA   (Aug 2017-May 2018)
  Team Member − A competition to convert a Chevy Camaro to a HEV w/ focus on MIL, SIL, HIL for rapid prototyping of a hybrid-supervisory controller. Responsible for VIL: analyzing/post-processing vehicle test and simulated data. Team awarded 1st place for MathWorks Sponsored Award for a GUI we made for this purpose using Matlab

Tata Motors-Pantnagar Plant, IN   (June 2016-July 2016)
  Intern − Assembly Shop for Tata Sumo and Safari Storm (TCF − 2A)
  Developed standardized documents for the stations of the frame line for Kaizen

IFP School, Rueil-Malmaison, FR   (July 2019-Feb 2020)
  Organizing Committee - DI 2-Stroke Engines International Conference at IFP School

PUBLICATIONS

Di Russo, M., Arora, V., Lyu, R., and Ku, J., "On-Road and Chassis Dynamometer Evaluation of a Pre-Transmission Parallel PHEV", SAE Technical Paper 2019-01-0365, 2019.

Mourlan, O. El, Camp, S., Hannagan, T., Arora, V., Neuville, M., Kousournas, V., "Path Planning for Autonomous Platoon Formation", MDPI, Sustainable Transportation – 1110117, 2021.

PROJECTS

Team project, UParisSaclay: Created an image classification challenge: pre-processed over 300,000 images on Google Cloud Platform (GCP); used transfer learning; worked on a scoring method for Explainability (XAI)

Team project, IFP School: Supervised by Thomas Hannagan (PSA); MPC optimization of path planned through RRT*, for platoon formation in a virtual vehicle environment using Python interfaced with Matlab and IPG CarMaker

Other projects: Kindly refer to https://github.com/AntiLibrary5/Reports

TECHNICAL & SOFTWARE SKILLS

Modeling in Simulink, Stateflow **Virtual vehicle test env:** CARLA, IPG CarMaker

Programming fluency in Python (PyTorch, pandas, scikit-learn), Matlab

Experience with Machine Learning/Deep learning models, GCP, SLURM, PostgreSQL (DBMS), git, MBD (MIL, SIL, HIL workflow), dSPACE (Control Desk, ds1007, RTI), Vector CANoe, CAN, UDP, TCP/IP protocols, bash, docker

Familiarity with C, C++, MongoDB (NoSQL), HDFS, Apache Spark

LANGUAGES

English: Fluent (TOEFL score – 101/120)

French: Currently taking B1 courses.

Hindi: Mother tongue

OTHER

Professional interests: Modeling physical systems, optimization for energy and emissions, real-time systems, path-planning for AVs, computer vision, explainable AI (XAI), indoor localization, multimodal deep learning

Personal interests: Psychology, cycling, distance-running, cooking, non-fiction, blogging